CHAPTER 11
COMMAND POST OPERATIONS

Echeloned command and control facilities control battalion task forces with varying levels of staff participation at each echelon. The TF command group operates forward and consists of the commander and those selected to go forward to assist in controlling maneuver and fires during the battle. The commander determines the composition, nature, and tasks of the command group based on METT-TC analysis. As a minimum, the command group--

- *Integrates combat assets in support of close operations.*
- *Controls close operations.*
- *Maintains situational understanding.*
- *Provides close situation information to the main CP.*

The commander and S3 monitor the battle, develop the situation, analyze courses of action, and control the company teams.

Section I. COMMAND AND CONTROL FACILITIES

Battalion task force command and control facilities consist of the vehicles and locations from which the TF commander, assisted by staff, directs the battle and sustains the force. These facilities include the main command post, the tactical command post, the combat trains command post, task force support area command post or the field trains command post.

11-1. COMMAND GROUP

The command group accompanies the commander forward to assist with command and control of the battle. The composition of the command group depends on the situation and the desires of the commander. The command group generally consists of the commander, S3, FSO, ALO, and crews from the assigned tracked vehicles. There is no requirement for these leaders to collocate; the commander may be in one part of the TF AO while the S3, for example, is in a separate part of the AO.

a. The command group is not a permanent organization and is normally prescribed by SOP and modified as necessary. The command group is highly mobile, enabling the commander to move about the battlefield as necessary. It is normally activated and employed only for the actual conduct of the battle, with the battalion TOC controlling the TF during other periods.

b. The command group fights the battle. The commander positions himself so that he can “see the battle” and issue appropriate orders at critical times. “Seeing the battle” does not mean simply positioning the command group in a location to observe decision points and critical actions. It also implies that the command group is in a position to receive reports on those key indicators that the commander has discussed with his subordinates and that, upon receipt of these reports, the commander is in a position to order decisive action. The FSO must be in a position to coordinate indirect fires and respond to changes in the situation or mission with recommended changes to the fire support plan. The ALO must be in a position to see the battlefield in order to coordinate

close air support, shift preplanned CAS targets, and advise the commander on CAS issues.

c. The command group normally operates in two to three armored vehicles modified for command and control. The crews of the tracked vehicles in the command group assist in operating radios, posting maps, moving the vehicles, and providing security, thus freeing the commander and S3 to concentrate on the battle.

11-2. MAIN COMMAND POST

The main CP includes the designated soldiers, equipment, and facilities employed in commanding and controlling the TF. The primary considerations in positioning the main CP are survivability, communications, and accessibility. Main CP vehicles and personnel must be as few as possible to allow rapid displacement, but numerous enough to accomplish command and control functions in support of the commander. The personnel who operate the main CP must be organized to provide both security and operations on a 24-hour basis. This requires enforcement of a sleep plan to preserve the ability of main CP personnel to perform continuous operations. (See Appendix D, Section III.) An internal set of SOPs must establish the organization and operation of the main CP. The main CP must maintain continuous communication and coordination with the company teams. (Refer to Appendix I for examples of charts that can assist in C2 and in maintaining information as to the current status of the battlefield.) The tactical operations center is an integral part of the main CP and is the control, coordination, and communications center for TF operations. The TOC consists of the S2 and S3 sections, the FSE, representatives from other attached elements, and the command group (when this group is not located forward). The TOC--

- Maintains contact and coordination with higher and adjacent headquarters.
- Synchronizes close operations, integrating CS and CSS into the maneuver plan.
- Analyzes and disseminates tactical information concerning both enemy and friendly situations.
- Plans future operations.
- Receives tactical and logistical status reports.
- Serves as alternate for the main CP command group.

11-3. COMBAT TRAINS COMMAND POST

The CTCP is the coordination center for combat service support for the battalion task force. Depending on the type organization, the S4 or HHC commander is responsible for operations, movement, and security of the combat trains. The S4 or HHC commander continually assesses the situation, anticipates the needs of units, and prepares to push support forward. Anticipating requirements is the key to successful combat service support. The CTCP needs an internal SOP to govern its operation and to outline duties of the personnel manning it.

a. The combat trains command post has the following functions:

- Plans and coordinates sustainment for tactical operations.
- Serves as alternate for the main CP.
- Prepares to shift support if the main effort changes.
- Monitors the ability of the CSS system to support the operation.

- Reports to the main CP any change in the ability of the CSS system to support the operation.
- Maintains logistics status reports on all organic, attached, combat, CS, and CSS units operating with the TF.
- Aggregates the reported logistics data to report to higher headquarters.
- Ensures personnel accountability of all assigned or attached TF personnel.

b. The S4 assesses the logistical posture of maneuver units, anticipates requirements, and pushes support forward as the tactical situation permits. The S1 monitors the tactical situation and relays MEDEVAC requests to the task force aid station. The S1 uses this information to initiate personnel replacement operations.

c. The CTCP also monitors the current tactical situation on the command net to assume its function as the alternate main CP. Tactical situation maps and charts are continuously updated based on information gathered from these sources.

11-4. TASK FORCE SUPPORT AREA COMMAND POST (FORCE XXI)/FIELD TRAINS COMMAND POST (AOE)

The task force support area command post in Force XXI organizations and the field trains command post in AOE organizations perform the same functions. The principal difference between the two command posts is the organization from which the personnel are derived. In Force XXI organizations the TFSA CP is commanded by the FSC commander and is located between the CTCP and the BSA. In AOE organizations, the FTCP is commanded by the HHC commander and when the TF commander collocates his field trains with the BSA, the HHC coordinates with the FSB commander for positioning and defensive responsibilities within the BSA. In some cases the FTCP may be located independent of the BSA; in this situation, the TF S-3 designates the general location for the field trains.

a. The TFSA CP (Force XXI organizations) is composed of the FSC commander, FSC 1SG, HHC XO, and the remaining elements of the S-1 and S-4 sections. It coordinates the collection and movement of CSS from the TFSA to forward elements of the TF. It controls and coordinates activities of the TFSA, including operations of the S&T platoon, elements of the maintenance platoon, company team supply sergeants, and the PAC. The TFSA CP monitors the task force A/L net and maintains an FM and digital communications link with the FSB.

b. The FTCP (AOE organizations) is composed of the HHC commander, XO, 1SG and the remaining elements of the S-1 and S-4 sections. It coordinates the collection and movement of CSS from the task force field trains and the FSB to the forward elements of the TF. It controls and coordinates the activities of the TF field trains, including operations of the support platoon, elements of the maintenance platoon, company team supply sergeants, and the PAC. The FTCP monitors the task force A/L net and maintains FM and land line communications with the FSB.

c. In both Force XXI and AOE organizations, LOGPACS are formed by the FSC/HHC commander and delivered by the S&T/support platoon and company supply sergeants. The TFSA CP or FTCP is responsible for organizing and dispatching the LOGPACS to the forward units.

11-5. COMMAND POST SURVIVABILITY

CP survivability depends mostly on concealment and mobility. The best way to protect a CP is to prevent the enemy from detecting it. Good camouflage and proper noise, light, and signal discipline enhance the security provided by a good location.

a. **Location.** The best place for CPs is in built-up areas. When necessary, a CP not in a built-up area should be located on a reverse slope with cover and concealment. Avoid key terrain features such as hilltops and crossroads. Locate CPs on ground that is trafficable, even in poor weather. Other considerations for positioning CPs include--

- Ensuring line-of-sight communications with higher, lower, and adjacent units.
- Avoiding redundancy of communications.
- Masking signals from the enemy.
- Using terrain for passive security (cover and concealment).
- Collocating with tactical units for mutual support and local security.
- Avoiding possible enemy TRPs for enemy artillery and CAS.
- Locating the CP near an existing road network out of sight from possible enemy observation.

b. **Access.** CPs should be centered in the area of operations whenever possible. They should be near, but not next to, a high-speed avenue of approach with no more than one or two routes leading into the CP. These routes should provide cover, concealment, and access to other routes of communication. When possible, a helicopter landing zone should be nearby.

c. **Size**. The area selected must be large enough to accommodate all CP elements. This includes liaison teams from other units; communications support; and eating, sleeping, latrine, and maintenance areas. Sufficient area must be available for positioning security and vehicle dismount points and for parking.

d. **Shelter.** Dryness and light are vital when working with maps and producing orders and overlays. CPs should be sheltered from weather conditions and should have lights for night work, with proper light discipline exercised. Buildings are the best choice, but if none are available, CPs operate from their organic vehicles or tents.

e. **Operational Security.** The following paragraphs outline OPSEC considerations for positioning CPs.

(1) There should be no signs advertising CP locations. Disperse CP vehicles, and thoroughly camouflage all vehicles and equipment. Maintain noise and light discipline.

(2) A security force is required, and it must have communications with the CPs. Establish security force positions as in any defensive position, with a 360-degree perimeter and located far enough out to prevent enemy fires on the CPs. The security force should have antitank weapons to protect CPs from enemy armor. Establish a reserve reaction force and rehearse the execution of the perimeter defense.

(3) Battalion task forces normally rely on off-duty personnel for CP security. The command group may assist in securing a CP if collocated. Units may rarely be able to employ combat elements to help secure a CP.

(4) In general, positioning C3 assets off major enemy mounted avenues of approach reduces the enemy threat. Units should position CPs so the enemy bypasses them.

(5) An OP should secure any remote antennas located outside the perimeter.

(6) All subordinate units and elements of the CP must receive near and far recognition signals. The CP uses these signals, challenges, and passwords to control access into its perimeter.

(7) In case of artillery or air attack, a designated rally point and an alternate CP should be at least 500 to 1,000 meters away.

11-6. DISPLACEMENT

CPs may displace as a whole or, more often, by echelon. Displacement as a whole is normally reserved for short movements, with communications maintained by alternate means and minimal risk of degrading CP operations.

a. A portion of the CP, called a jump CP, moves to the new location, sets up operations, and takes over operational control of the battle from the main CP. The remaining portion of the CP then moves to rejoin the jump CP. The jump CP consists of the necessary vehicles, personnel, and equipment to assume CP operations while the remainder moves. At battalion task force level, the jump CP normally comes from within the main CP.

b. The XO or S3 selects a general location for the jump CP site. The jump CP can be accompanied by a quartering party, which may consist of a security element and personnel and equipment for quartering the remainder of the CP. The signal officer, who is usually part of the quartering party, ensures communications on all nets are possible from the new site. When the jump CP becomes operational, it also becomes the net control station for the unit. The remainder of the CP then moves to rejoin the jump CP.

c. Another technique of displacement is to hand off control to the command group and move the main CP as a whole. The command group can also split, with the commander moving with the main effort and the S3 moving with the supporting effort.

Section II. COMMAND POST OPERATIONS

Each CP must be organized to permit continuous operations and the rapid execution of the command and control process.

11-7. STANDING OPERATING PROCEDURES

SOPs for each CP should be established, known to all, and rehearsed. These SOPs should include--

- The organization and setup of each CP.
- Plans for teardown and displacement of the CP.
- Eating and sleeping plans during CP operations.
- CP shift manning and operation guidelines.
- Physical security plans for the CP.
- Priorities of work during CP operations.
- Loading plans and checklists.
- Orders production.
- Techniques for monitoring enemy and friendly situations.
- Posting of CP map boards.
- Maintenance of CP journals and logs.

It will be many years before the majority of the army is digitally equipped and even then there will be elements operating within a joint or coalition environment that will not have

digital equipment. The staff must recognize that integrating an analog unit into the BN or TF requires the retention of most of the analog control techniques. In essence, two control systems must be in operation, with particular attention paid to keeping the analog unit(s) apprised of all the relevant information that is flowing digitally. (See Section IV, Communications Systems, for additional information.) The BN or TF SOP should include--

- Production and distribution of hard copy orders and graphics.
- Increased graphic control measures. Digital units tend to use less graphic control measures due to increased situational understanding.
- Receiving standardized reports over FM-voice or mobile subscriber equipment (MSE) communications.
- Equipping LNO teams with digital systems to give analog units limited connectivity.

11-8. COMMUNICATIONS

Command posts monitor communications nets, receive reports, and process information to satisfy commander information needs or CCIR. This information is maintained on maps, charts, and logs. Each staff section maintains daily journals to log messages and radio traffic.

11-9. MAPS

CPs maintain information as easily understood map graphics and charts. Status charts can be combined with situation maps to give commanders friendly and enemy situation snapshots for the planning process. This information must be updated continuously.

a. For simplicity, all map boards should be the same size and scale, and overlay mounting holes should be standard on all map boards. This allows easy transfer of overlays from one board to another.

b. The following procedures for posting friendly and enemy information on the map will aid commanders and staff officers in following the flow of battle.

(1) All graphics should be posted on an overlay. Friendly and enemy unit symbols should be displayed on clear acetate placed on the operations overlay. These symbols can be marked with regular stick cellophane tape, push pins, or with marking pen.

(2) The exact unit location is indicated by the lower left hand corner of the symbol.

(3) Units normally keep track of subordinate units two levels down. This may be difficult during the conduct of combat operations. It may be necessary to track locations of immediate subordinate units instead.

11-10. THE BATTLE CAPTAIN

The focus of the TOC staff is on collecting the critical information the commander needs to fight the battle. Information flow is a constant problem in most TOCs, especially since everyone in the TOC must maintain a common operating picture. The battle captain's role is to plan, coordinate, supervise, and maintain communication flow throughout the TOC to ensure the successful accomplishment of all assigned missions. The TOC battle captain assists the commander, XO, and S3 by being the focal point in the TOC for communications, coordination, and information management. The battle captain is also the TOC OIC in the absence of the commander, XO, and S3.

a. The battle captain has the overall responsibility for the smooth functioning of the TOC facility and its staff elements. This range of responsibility includes--

- Maintaining continuous operations of the TOC while static and mobile.
- Battle-tracking the current situation.
- Ensuring communications are maintained with and between all stations and that all messages and reports are routed and logged per SOP.
- Assisting the XO with coordination of TOC staff functions to ensure a smooth and continuous information flow between the staff sections of the TOC.
- Processing essential data from the incoming flow of information to ensure all tactical and logistical information is gathered and provided to the TOC staff, S3, and XO on a regular basis.
- Providing security for the TOC, including its physical security and maintenance of noise and light discipline.
- Ensuring mobility of the TOC, including configuration, equipment, and training to facilitate rapid movement.
- Conducting TOC battle drills and enforcing TOC SOP.

b. The battle captain ensures that all staff elements in the TOC understand their actions in accordance with SOP and provides coordination for message flow, staff briefings, updates to TOC charts, and other coordinated staff actions. As a focal point in the TOC, the battle captain processes essential information from incoming data, assesses it, ensures dissemination, and makes recommendations to the commander, XO, and S3.

c. Information management in the TOC can include processing journals, message forms, reports, FRAGOs, and requests for information. The battle captain ensures the consistency, accuracy, and timeliness of information leaving the TOC, including preparing and dispatching FRAGOs and warning orders. In addition, he monitors and enforces the updating of charts and status boards necessary for battle management and ensures this posted information is timely, accurate, and accessible.

d. To function effectively, the battle captain must have a working knowledge of all elements in the TOC, understand unit SOP, and ensure the TOC staff uses them. He must know the current plan and task organization of the unit and understand the commander's intent. In addition, the battle captain must understand the limits of his decision-making and action authority.

e. The battle captain must be integrated into the decision-making process and know why certain key decisions were made. He must know the technical aspects of the battle plan and understand the time-space relationship to execute any specific support task. He must understand and enforce the battle rhythm--the standard events or actions that happen during a normal 24-hour period--and ensure the TOC staff is effective throughout the period. Battle captains use their judgment to adjust TOC activities and events to accomplish the TOC mission across different shifts, varying tactical circumstances, and changes in TOC location.

Section III. COMMUNICATION

Communication is the means through which C2 is exercised. Soldiers throughout the organization must know the chain of command and succession of command. There must be open lines of communications up, down, and laterally. The commander should--

- Provide for redundancy in communications means by having backup at key locations.
- Make sure subordinates know what to do during interruptions in communications. Ensure SOP specifies immediate actions in case of jamming, including prearranged frequencies to switch to and code words.
- Avoid overloading the communications systems. Use them only when necessary. Practice disciplined communications procedures by eliminating nonessential conversations.

11-11. RESPONSIBILITIES

The order of responsibilities for communications is--

- Senior to subordinate.
- Supporting to supported.
- Reinforcing to reinforced.
- Passing to passed (for forward passage of lines).
- Passed to passing (for rearward passage of lines).
- Left to right.
- Rearward to forward.

All units take immediate action to restore lost communications. These responsibilities apply to establishing liaison between headquarters.

11-12. MEANS OF COMMUNICATION

As the Army enters the 21st century, digital communications upgrades will change the nature of operations at the battalion task force level. The information battlefield will see rapid dissemination of products up and down the chain of command and to adjacent units. The Army will share a common picture of the battlespace regardless of task organization. Emerging doctrine has redefined the Army tactical command and control system (ATCCS) as the integration of six functional area control systems (Figure 11-1, page 11-10) that provide situational information and decision support to the operating systems at echelons corps and below (ECB). Other means include couriers, sound and visual signals, telephones, and radios.

a. **Wire.** Wire is normally used for internal communications in the CP area, assembly areas, and defensive positions. Wire takes more time to plan, install, and recover, but provides reliable communication if time and the tactical situation permit its installation.

b. **Courier.** Couriers are used between C2 facilities and between higher and lower headquarters. Couriers are slower and more vulnerable than other means of communications but can be used when other means cannot be used. When authorized, motorcycle messengers can be used between the CP, trains, higher headquarters, and company teams. Messengers should be instructed on destruction procedures to prevent enemy capture of messages.

c. **Sound and Visual.** Sound and visual signals may be included in signal operating instructions (SOI) extracts or unit SOPs. Sound signals include metal-on-metal, vehicle horns, whistles, and bells. Visual signals include lights, flags, arm-and-hand signals, and pyrotechnics.

d. **Telephone Lines.** Commercial telephone lines can be used with permission of higher headquarters. If used, it should be assumed the enemy can monitor all calls made using commercial telephone lines.

e. **Radio.** Radio should not be the primary means of communication until after the unit makes contact.

f. **Army Tactical Command and Control System.** The principal ATCCS automation components of the ABCS are--

- MCS.
- AFATDS.
- FAADC3I.
- ASAS.
- CSSCS.

g. **Force XXI Battle Command Brigade and Below.** FBCB2 is common to all aspects of the digitized battlefield; selected individuals in all platoons and company teams have one. It is in most C2 platforms and TOCs.

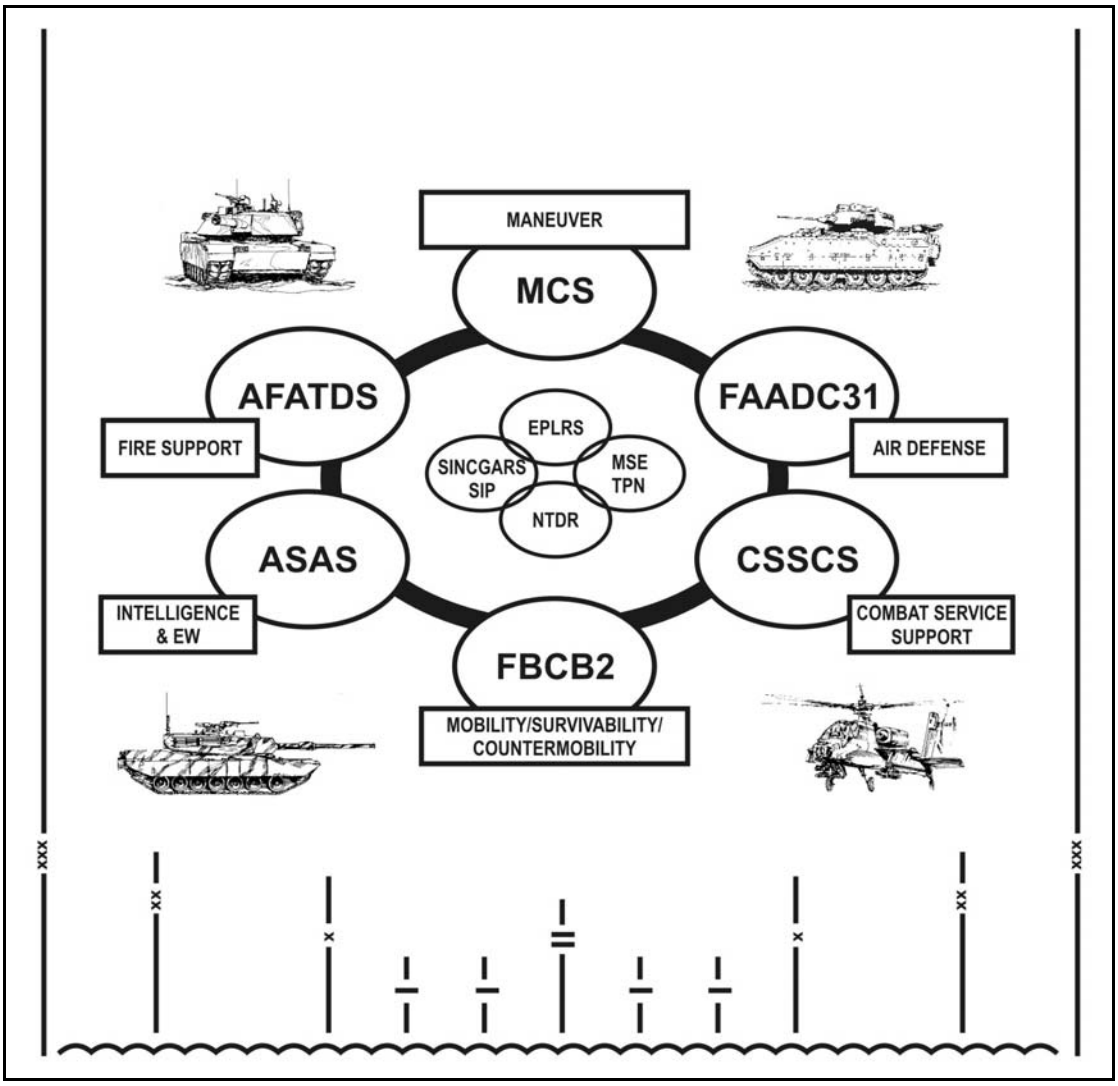

Figure 11-1. ATCCS.

11-13. COMMUNICATIONS SECURITY

The commander must understand the capabilities, limitations, and vulnerabilities of the CP communications systems and ensure the employment of effective communications control and security as an essential function of command post operations.

a. **Radio Transmissions.** Radio transmissions should be brief to reduce the EW signature. Using secure operational and numerical codes reduces the chance of enemy detection. Use low-power transmissions and terrain to mask signals from enemy direction-finding equipment. Use couriers or wire for lengthy messages. Units must practice using SOI, SOP, and operational terms.

b. **Physical Security**. Physical security protects cryptographic systems and classified documents from capture or loss. Before vacating an area, inspect it for any materials that could provide friendly information to the enemy. Patrol wire lines to prevent enemy tapping. When SOI codes or cryptographic equipment is lost or captured, report the facts promptly to the next higher command. The unit SOP must contain instructions for destruction of equipment and classified documents to prevent their capture or use by the enemy.

Section IV. COMMUNICATIONS SYSTEMS

Communications is the means by which the commander projects his command and control across the width and depth of the battlefield. The Army battle command system encompasses all Army communications and consists of the following subordinate systems: Army global command and control system (AGCCS) at the operational or theater level and the Army tactical command and control system (ATCCS) at ECB. Communications currently available to the TF fall under one of the subsets of the ATCCS:

- Combat net radio (CNR).
- Army common user system (ACUS).
- Army data distribution system (ADDS).

11-14. COMBAT NET RADIO

The primary means of communication for the maneuver battalion task force is CNR. This family of push-to-talk radios includes the single-channel ground and airborne radio system (SINCGARS), improved high frequency radio (IHFR), and single-channel tactical satellite (TACSAT) radios.

a. **SINCGARS.** SINCGARS is the primary means of communications available to the TF. Although primarily a voice transmitter, SINCGARS can also be used to pass limited data transmissions. The planning range for this system is a maximum of ten kilometers dismounted and 35 kilometers mounted. The range can be extended through use of retransmission equipment or antennas such as the OE-254. SINCGARS, through CNR, can provide access into the ACUS via the KY-90 combat net radio interface (CNRI). The KY-90 is installed on the battlefield by the signal battalion. The SINCGARS radio nets typically installed by a battalion task force are command and control, intelligence, and administrative/logistical. The TF also enters and monitors nets established by its higher headquarters. When establishing SINCGARS nets for CP operations, remoting the antennas limits the enemy's ability to direction-find the CP location.

b. **Improved High Frequency Radio.** Using IHFR provides a versatile capability for short- and long-range communications and provides longer range than SINCGARS. High frequency (HF) is the only tactical communications asset that may achieve long-range communications independent of terrestrial or satellite relays. HF is also useful where line of sight (LOS) cannot be achieved. HF communications may be either voice or secure data, but the distribution of this equipment is limited to one or two sets per TF. Radio remains the most detectable means of electronic communications and is subject to both intentional and unintentional electronic interference.

c. **TACSAT.** The use of satellite communications gives the commander the greatest range. The TACSAT radio transmits in the UHF/VHF range, requiring the antenna to have LOS with the satellite. Satellite access time must be requested in advance of use.

11-15. ARMY COMMON USER SYSTEM

Mobile subscriber equipment provides the ACUS at ECB. Signal battalions install the backbone node centers (NCs) while small extension nodes (SENs) and radio access units (RAUs) provide access for the maneuver unit.

a. **Mobile Subscriber Radio Telephone.** The mobile subscriber radio telephone (MSRT) is the primary MSE equipment available to the TF. It consists of a VHF radio and a digital secure voice telephone (DSVT). The MSRT automatically selects random channels for each call and chooses the lowest effective radio frequency transmit level. The MSRT can be installed in a vehicular configuration, remote from the vehicle, or in a stand-alone mode when used with an appropriate power supply. The MSRT must be within 15 kilometers of a RAU site to communicate. Distribution in a TF is usually limited to two or three MSRTs.

b. **Digital Voice Nonsecure Telephone.** The digital voice nonsecure telephone (DVNT) is a four-wire nonsecure telephone terminal that requires collocation with a SEN to connect to the MSE network. The SEN provides connection to the tactical packet network (TPN) for the TF computers. Using the TPN allows the TF to connect commercial computers or Army systems (warlord or maneuver control system) to the MSE network. Typically, TF operations do not include task organization of a SEN for TF use. The FTCP located in the BSA is usually the first SEN access available to a TF.

11-16. ARMY DATA DISTRIBUTION SYSTEM

At ECB, the enhanced position location reporting system provides a network by which commanders can pass digital traffic.

11-17. THE DIGITAL BATTLEFILED

The information battlefield will see rapid dissemination of products up and down the chain of command and to adjacent units. The Army will share a common picture of the battlespace regardless of task organization.

a. The principal ATCCS automation components of the ABCS are--

- MCS.
- AFATDS.
- FAADC3I.
- ASAS.
- CSSCS.

- FBCB2.

b. The principal ATCCS communication components of the ABCS are--
- EPLRS.
- Near-term digital radio (NTDR).
- CNR SINCGARS system improvement plan (SIP).
- MSE TPN.

11-18. TACTICAL INTERNET

The TI is a collection of interconnected tactical radios and computer hardware and software providing seamless situational information and C2 data exchange between maneuver, CSS, and C2 platforms. The TI's primary function is to provide a more responsive information exchange capability to support battle command at brigade and below.

a. The TI consists of FBCB2 computers, the EPLRS very high-speed integrated circuits (VHSIC), the SINCGARS SIP, and other supporting communications equipment. It is an automated, router-based communications network using commercial Internet standard protocols to move data vertically and horizontally through the brigade area and to higher-level echelons using the MSE TPN. Automated network management tools in the maneuver battalion task force provide TI planning, monitoring, and reconfiguring capabilities.

b. The TI is divided into sub-areas: autonomous systems (ASs) and routing areas (RAs). Typically, a battalion task force represents one AS. An AS is a collection of networks, under a common administration, that shares a common routing strategy. An AS can consist of one or many networks, and each network may or may not have an internal structure. An RA is a network in an AS. RAs and the AS to which they belong share the same routing strategy.

11-19. FORCE XXI BATTLE COMMAND BRIGADE AND BELOW

The FBCB2 hardware is a mix of commercial, ruggedized, and militarized computers installed in vehicles at brigade and below. When available, the FBCB2 can be connected to the precision lightweight GPS receiver (PLGR) and other embedded platform interfaces, such as the BCIS. FBCB2 is common to all aspects of the digitized battlefield and platforms found in platoons and companies. It is in most C2 platforms and TOCs.

a. FBCB2 uses the variable message format (VMF) to send and receive messages horizontally and vertically on the battlefield, irrespective of task organization. VMF improves current configurations in which the BOS automation systems do not communicate to each other. This provides communication and processing capabilities to the Warfighter, which yields significant advantages in two key areas.

(1) ***Situational Information.*** Situational information is a state of understanding gained from knowledge based on accurate and real-time information of friendly, enemy, neutral, and noncombatant locations. It consists of a common, relevant picture of the battlefield scaled to specific levels of interest and needs.

(2) ***Command and Control.*** C2 is direction by a commander over assigned forces in accomplishing a mission. A commander employs C2 functions as he plans, directs, and controls forces and operations to accomplish a mission.

b. FBCB2 provides each echelon with battlefield situational information two echelons up and down and one adjacent unit left and right. FBCB2 significantly improves the effectiveness of the force by providing up-to-date combat situation information, based on echelon and location, to include--

- Friendly and enemy positions.
- Air and ground unit positions.
- Maps, terrain, and elevation.

FBCB2 also provides rapid generation and dissemination of messages and acknowledgments to include--

- Orders and requests.
- Fires and alerts.
- Reports.
- Rapid generation and dissemination of overlays on the situation picture.
- Semiautomatic exchange of selected mission-critical data between the FBCB2 and the ABCS component systems.

c. For each task reorganization, FBCB2 hosts affected by the task reorganization must receive new initialization data. Transfer of the modified initialization data occurs through signal channels to the ultimate users.

11-20. ENHANCED POSITION LOCATION REPORTING SYSTEM WITH VERY HIGH SPEED INTEGRATED CIRCUITS

Battalion task force C2 platforms employ EPLRS VHSIC as their primary data communications link to company and platoon platforms. It serves as a position location, navigation, identification, and communications system. Its primary components are the NCS and the radio sets (RSs). The NCS is the centralized control element used for system initialization, monitoring, and control. The RSs are the radio receiver-transmitters provided to EPLRS VHSIC users. The TF uses EPLRS VHSIC to provide wide area network (WAN) connectivity down to platoon and up to brigade. The antenna used with the system is an omni-directional dipole. The planning range is three to ten kilometers between radios, depending on power output settings and terrain.

11-21. RESPONSIBILITIES

Key personnel include the battalion task force signal officer, unit signal support systems specialists, systems integration vehicle (SIV) operators, TOC LAN manager, and ABCS system administrator.

a. **Battalion Task Force S6 (C4 Operations Officer).** The battalion task force S6 manages the operations of communications systems received from the brigade communications systems to support its organization as well as the TF's own communications systems. He has OPCON of attached signal personnel. The battalion task force S6--

- Participates in the planning and operations process of the TF.
- Coordinates closely with the brigade signal officer (BCT S6) on planning and operating the TI as it relates to the TF.
- Understands the capabilities and operation of all communication and automation equipment in the TF.
- Advises the TF staff on communications matters.

- Receives and validates EPLRS VHSIC requirements and provides these to the brigade signal officer.
- Maintains the status of communications systems operating in the TF.
- Coordinates employment and operation of the SIV assigned for network management.
- Keeps the SIV team apprised of TF mission operations.
- Exercises supervisory responsibility for training and assigning the signal support system specialists military occupational specialty [MOS] 31U) in the TF.
- Develops a concise signal annex and communications/digital node architecture overlay to the TF OPLAN or OPORD.
- Tracks COMSEC distribution within the TF.
- Tracks all signal and digital nodes in the TF AO.

b. **Unit Signal Support Systems Specialists.** The unit signal support system specialists assigned to all units accomplish system maintenance and TI system initialization and re-initialization functions as required.

c. **SIV Operators.** The two information systems integrator-analysts and one single-channel radio operator are responsible for SIV operations. The information systems operator-analysts execute the network plan, initialize the network, and operate the network. The radio operator-maintainer establishes the site for the SIV and installs, operates, and maintains the radio systems (SINCGARS SIP, EPLRS VHSIC, and NTDR) in the systems integration vehicle.

d. **TOC LAN Manager.** The TF S3 is responsible for ensuring the TOC LAN (which supports all ABCS component systems) is properly integrated to provide synchronization of information needed for successful battle command execution.

e. **ABCS System Administrator.** The system administrator is responsible for the installation, operation, and maintenance of an ABCS computer host. Each ABCS component system (ASAS, AFATDS, CSSCS, FAADC3I, and MCS) assigns a "senior operator" to serve as system administrator.

Section V. DIGITAL COMMAND AND CONTROL SYSTEMS AND ARCHITECTURE

This section provides basic information on the digital command and control systems and architecture that support brigade C2 operations.

11-22. ARMY BATTLE COMMAND SYSTEM COMPONENTS

The ABCS consists of the ATCCS subcomponents, the FBCB2 system, and the tactical internet. The ATCCS components have traditionally been “stovepipe” systems in their development, with very limited interface capability to other digital systems. With version 6.0 software in late 1999, the systems began migration to a joint common database (JCDB) to improve interface capability and achieve functional commonality. The ATCCS components are the primary digital communication systems between command posts. FBCB2 is the primary digital system for communication and transmission of situational information data at task force level and below and for some brigade units (for example, the brigade reconnaissance troop). The ATCCS components discussed below

have embedded battle command software that allows interface with FBCB2. FBCB2 system hardware is not located in brigade CPs.

a. **Maneuver Control System.** The MCS is the hub of the ABCS component in each command post. It is the primary system for the creation and dissemination of orders, graphics, and operations-related reports. MCS automatically receives friendly forces positioning data generated by FBCB2- or embedded battle command- (EBC) equipped platforms of subordinate units resulting in the friendly picture. EBC is a software subcomponent of MCS. It is a derivative of FBCB2 software and allows MCS to exchange reports and graphics with FBCB2 systems.

(1) At task force level, MCS performs these primary functions:

- Receives orders and graphics from higher and adjacent units.
- Creates and disseminates orders and graphics to subordinate, higher, and adjacent units. Near-term ability to interface graphics and orders to FBCB2 and platform EBC is limited.
- Extracts information from other systems to display a picture of the battlefield that may include friendly and enemy situational information, terrain, friendly graphics, artillery range fans, ADA umbrellas, obstacles and contaminated areas, C2 nodes, and supply nodes.
- Sends and receives reports.

(2) Future system capabilities should allow for MCS to support course of action analysis and war gaming as well as digital rehearsals.

(3) Two MCS systems are located in the main CP. One is used primarily for generation and transmission of orders and messages; the other normally is set to display enemy and friendly situational information and friendly graphics to allow the staff to track the battle.

(4) There are limitations in the automatic generation of friendly situational information. Obviously, forces that are not equipped with FBCB2 or are not transmitting to the TI will not automatically appear in the situational information picture and must be manually input into MCS by the operations section. Operators may also manually input friendly icons via FBCB2.

b. **All-Source Analysis System.** ASAS supports intelligence operations, providing linkage to strategic and tactical intelligence sensors and sources. ASAS's primary functions include--

- Data access, database development, and correlation capabilities.
- Creation and dissemination of intelligence reports, templates, and annexes.
- Receipt of intelligence reports from a variety of sources (including FBCB2 and other digital systems) and display and management of the enemy picture.
- Collection management.
- Support of targeting functions.
- Linkage to JSTARS and UAVs (dependent on other systems and capabilities normally not available below brigade level).

The task force has a single ASAS system located in the S2 platform at the main CP. The S2 uses ASAS to receive intelligence reports from all sources and to create and manage the correlated enemy situational information picture, which the other ATCCS components in the CP can access. Additionally, the S2 routinely sends the ASAS picture he generates down to subordinate units via FBCB2. He also sends the situational

information picture to brigade, where it is integrated into the brigade-level enemy situational information picture by the brigade S2 section.

c. **Advanced Field Artillery Tactical Data System.** AFATDS provides automated capabilities to control fire support operations. Located in the FSE platform at the main CP and in the supporting artillery battalion CP, the system provides the ability to--

- Create and disseminate fire support orders, graphics, and control measures.
- Receive and process calls for fire from other digital systems and target acquisition radars.
- Manage mission allocation.
- Monitor firing unit status and locations.
- Transmit and receive reports and free-text messages.
- Display the enemy and friendly situational information pictures from MCS and ASAS.
- Provide integrated fires and intelligence and electronic warfare (IEW) management in conjunction with ASAS.

d. **Forward Area Air Defense Command, Control, Computers, and Intelligence System.** FAADC3I is the collection of computer and communication systems uses to control air defense elements and create the air battle picture. It serves to integrate sensors (airborne warning and control system [AWACS], Patriot, Sentinel) with SHORAD weapons systems. The long-range air picture is created from information received from AWACS aircraft transmitted on joint tactical information distribution system (JTIDS) radios, and from the division's Sentinel air acquisition radars transmitted through the ground-based sensor (GBS). Air track data is sent via EPLRS and SINCGARS radios to individual firing elements (Linebacker, Avenger, and Stinger teams). The total FAADC3I system provides real-time enemy air engagement operations, airspace situational information, and air threat early warning. The air defense element in the task force CP is equipped with an amplitude modulated (AM) radio to monitor the division air defense early warning net and a handheld terminal unit that provides a digital link to the FAADC3I network. FM voice remains the primary means for transmitting initial air threat warnings to the task force as a whole for the near-term. FBCB2 is the secondary method and is capable of displaying both visual and audible alerts to crews.

e. **Combat Service Support Control System.** CSSCS provides logistics status and information in support of CSS planning and operations. The system receives subordinate unit logistical reports from FBCB2 and other CSSCS terminals, and it transmits reports and requirements to echelons-above-brigade support elements. The S1 and S4 sections in the CTCP have a CSSCS terminal with FBCB2. It uses this terminal to receive digital logistical and situation reports from units within the task force and to input data into the CSSCS network to conduct personnel transactions and to request, coordinate, and receive supplies.

f. **FBCB2.** FBCB2 is the foundation system for ABCS. Mounted on most of the vehicles in the task force, each system is linked to a PLGR and a SINCGARS or EPLRS radio. Each FBCB2 generates and transmits its own position location. Collectively, the FBCB2 systems generate the friendly situational information picture. Operators use FBCB2 to generate enemy spot reports, which comprise most of the enemy picture at the tactical level. The messaging, reporting, and orders and graphics capabilities of the system support battle command for each battlefield functional area. FBCB2 receives data

across the tactical internet via the internet controller (INC). The INC is a tactical router built into the SINCGARS radio system. The EPLRS data radio and the SINCGARS radio transmit and receive digital information between vehicles.

11-23. DIGITAL COMMAND AND CONTROL TECHNIQUES

This paragraph discusses considerations and techniques for digital command and control procedures and for integrating analog and digital units. The potential of these systems to contribute to battlefield lethality, tempo, and ability to dominate is enormous. Digital command and control systems bring a dramatic increase in the level of situational information units may achieve. They can significantly speed the process of creating and disseminating orders, allow for extensive databasing of information, and increase the speed and fidelity of coordination and synchronization of battlefield activities. At the same time, achieving the potential of these systems requires extensive training, a high level of technical proficiency by both operators and supervisors, and the disciplined use of detailed SOPs. Communications planning and execution to support the digital systems is significantly more demanding and arduous than is required for units primarily relying on FM and MSE communications.

a. **FM or Digital.** Whether to use FM or digital means for communication is a function of the situation and SOPs. Even though both systems are critical for effective C2 at the task force level, FM remains the primary method for control at task force level and below during operations, with additional support from the situational information display provided by FBCB2 or EBC. Some general considerations can help guide the understanding of when to use which mechanism at what time.

(1) FM is the primary method of communications between task force and brigade and when elements are in contact throughout the task force. Prior to and following an engagement, the staff and commanders use digital systems for disseminating orders and graphics and conducting routine reporting. During operations, however, the task force staff uses a combination of systems to report and coordinate with higher and adjacent units.

(2) Staffs at higher echelons, particularly division and brigade levels, must remain sensitive to the difficulty and danger of using digital systems when moving or in contact. They should not expect digital reports under those conditions. Digital reporting builds the COP (particularly the posting of enemy icons) and failure to render such reports results in an incomplete COP. Additionally, the units must build the COP as the action occurs in order to provide the commander with a COP that contains relevant information that leverages his decision making. Other general guidelines include--

- Initial contact at any echelon within the task force should be reported on FM voice; digital enemy spot reports should follow as soon as possible to generate enemy situational information.
- Elements moving about the battlefield (not in command posts) use FM voice unless they can stop and generate a digital message or report.
- Emergency logistical requests, especially casualty evacuation requests, should be initiated on FM voice with a follow-up digital report if possible.
- Combat elements moving or in contact should transmit enemy spot reports on FM voice; their higher headquarters should convert FM reports into digital

spot reports to generate situational information. At team level, the XO and the first sergeant convert the reports.

- Calls for fire on targets of opportunity should be sent on FM voice; team FISTS submit digitally to AFATDS.
- When equipped with the far target locator (FTL), vehicle crews should engage the target with the FTL and select the call for fire message button on the spot report (SPOTREP) enabling a digital call for fire.
- Planned calls for fire from FISTS in the initial part of an engagement should be sent digitally.
- Routine logistical reports and requests should be sent digitally.
- Routine reports from subordinates to task force prior to and following combat should be sent digitally.
- Orders, plans, and graphics should be sent digitally, accompanied by an FM voice call to alert recipients that they have critical information being sent to them. Additionally, the transmitting element should request a verbal acknowledgement of both receipt and understanding of the transmitted information by an appropriate soldier (usually not the computer operator).
- The transmission of of a TF order via FBCB2 is time consuming and difficult to read and manipulate. FBCB2 best handles short FRAGOs and WARNOS.
- Obstacle and NBC-1 reports should be sent initially by voice followed by digital reports to generate a geo-referenced situational information message portraying the obstacle or contaminated area across the network.

b. **Friendly Situational Information.** The creation of friendly situational information is extensively automated, requiring minimal manipulation by command posts or platform operators. Each platform creates and transmits its own position location and receives the friendly locations (displayed as icons) of all the friendly elements in that platform's wide area network. This does not necessarily mean that all friendly units in the general vicinity of that platform are displayed, however, since some elements may not be in that platform's network. For example, a combat vehicle in a task force will probably not have situational information on a corps artillery unit operating nearby since the two are in different networks. The situational information generated from individual FBCB2- or EBC-equipped platforms is transmitted to command posts through the TOC server to MCS. The other ATCCS components can access the friendly situational information picture through MCS.

(1) Commanders must recognize limitations in the creation of friendly situational information that results from vehicles or units that are not equipped with FBCB2 or EBC. The following are two aspects to consider.

(a) Not all units will be equipped for years to come, particularly in the reserve component. With over 60 percent of the corps logistical units and supporting artillery in the Army Reserve or National Guard, it is inevitable that analog units will enter the brigade and task force area of operations.

(b) Most dismounted soldiers will not be equipped with a digital device that transmits situational information. A system for dismounted soldiers has been under development for some time, but may not be fielded by 2005. Distribution of the system will probably not be below squad leader level.

(2) The following are ways to overcome these shortfalls.

(a) A digitally equipped element tracks the location of specified dismounts and manually generates and maintains an associated friendly icon. As an example, the mechanized team XO can generate an icon for dismounted squads.

(b) The task force main CP tracks analog units operating with the task force and generates associated friendly icons.

(c) A digitally equipped platform acts as a liaison or escort for analog units moving or operating in the task force area. Task force and higher elements must be informed of the association of the LNO icon with the analog unit.

(d) *Do not use friendly situational information to clear fires since not all elements will be visible.* Friendly situational information can be used to deny fires and can aid in the clearance process, but it cannot be the sole source for clearance of fires. This holds true for all ABCS systems.

c. **Enemy Situational Information.** The hardest and most critical aspect of creating the situational information picture is creating the picture of the enemy. The enemy situational information picture at brigade and task force levels is the result of multiple inputs--FM spot reports, UAV and JSTAR reports, reports from FBCB2- and EBC-equipped platforms in subordinate units, electronic or signal intelligence feeds, and inputs from the S2 section. Enemy situational information generation is a complex process that is partially automated but requires a great deal of work and attention to detail to get right.

(1) Generation of the enemy situational information picture occurs at all echelons. At task force level and below, the primary mechanism for generating situational information is FBCB2 (or EBC). When an observer acquires an enemy element, he creates and transmits a spot report, which automatically generates an enemy icon that appears network-wide. Only those in the address group to whom the report was sent receive the text of the report, but all platforms in the network can see the icon. As the enemy moves or its strength changes, the observer must update this icon. If the observer must move, he ideally passes responsibility for the icon to another observer. If multiple observers see the same enemy element and create multiple reports, the task force or brigade S2 (or some other element that has the capability) must eliminate the redundant icons.

(2) FBCB2 spot reports must include the higher headquarters S2 in the address group for the data to be routed through the TOC server into ASAS to feed the larger intelligence picture. FM reports received at a command post can be manually input into the ASAS database by the S2 section. FBCB2 and FM voice reports are the primary source of enemy situational information for fighting the close and rear battles.

(3) At brigade, the S2 section and the supporting ACT receive ASAS intelligence feeds from higher and adjacent units along with feeds from JSTARS, UAVs, and the common ground station (CGS). They enter enemy information from these sources into the ASAS database and send this information via ASAS to the task force S2s. These feeds, along with FM voice and FBCB2 reports, are the primary source of enemy situational information for executing the brigade deep fight and providing TFs a picture of what is coming into their areas.

(4) Fusion of all the intelligence feeds is normally done at brigade and division levels. The brigade S2 routinely (every 30 minutes to every hour) sends the updated enemy situational information picture to subordinate units down to platform level. Since the fused ASAS database is focused on the deeper areas of the battlefield and its timeliness may vary, subordinate task force elements and the reconnaissance troop normally use

only the FBCB2-generated intelligence picture. Company teams should stay focused entirely on the FBCB2-generated enemy situational information. Task force leaders and staffs refer occasionally to the ASAS-generated intelligence picture to keep track of enemy forces that will be encountered in the near future but that are not yet part of the task force close fight.

(5) As systems develop further in the future, the generation of enemy situational information will be increasingly automated. However, the success of the intelligence effort depends primarily on the ability of staffs to analyze enemy activities effectively, to develop and continuously refine effective IPB, and to create and execute effective collection management plans. Automation and displays contribute enormously to the ability to disseminate information and display it in a manner that aids comprehension, but information generation must be rapid for it to be useful. Information must also be accompanied by analysis: pictures alone cannot convey all that is required, nor will they be interpreted the same by all viewers. S2s must be particularly careful about spending too much time operating an ASAS terminal while neglecting the analysis of activities for the brigade and subordinate commanders and staffs.

(6) The enemy situational information picture usually is incomplete and less current than friendly situational information. The timeliness and accuracy of the enemy picture always must be scrutinized. Units must use the picture to focus observers and orient the fire support process but should not use it as the sole source for generating indirect fire support target location data--it usually will not be timely enough.

d. **Graphics and Orders.** All ATCCS components effectively support the creation and transmission of doctrinal field orders. The brigade staff sections normally develop their portions of orders and send them to the S3 who plans MCS, where they are merged into a single document and transmitted to subordinate, higher, and adjacent units. In creating orders, remember that the tactical internet does not possess high transmission rates like civilian e-mail. Orders and graphics must be concise to reduce transmission times. Orders transmitted directly to FBCB2-equipped systems (as all subordinate leaders in the task force have) must meet the size constraints of the order formats in FBCB2 and EBC. Graphics and overlays should be constructed with the same considerations for clarity and size. Situational information reduces the need for control measures to some degree, but the staff must always consider the integration of analog units and that situational information may not always be available to all elements.

(1) ***Graphics.*** When creating graphics on an ATCCS component, remember that the primary users will be FBCB2- or EBC-equipped. The graphics must interface and transmit. The interface and commonality of graphics will continue to evolve technologically and will require further software corrections. The following guidelines apply.

(a) Create control measures relative to readily identifiable terrain, particularly if analog units are part of the task organization.

(b) Boundaries are important, but digital units tend to disregard them initially until multiple units have to operate in near proximity or until it becomes necessary to coordinate fires or movement of other units.

(c) Intent graphics that lack the specificity of detailed control measures are an excellent tool for use with warning and fragmentary orders and when doing parallel planning. Follow them with appropriately detailed graphics as required.

(d) Use standardized colors to differentiate units. This should be articulated in the brigade SOP and established at brigade level. For example, brigade graphics may be in black, armor TF A in purple, armor TF B in magenta, and mechanized infantry TF in brown. This adds considerable clarity for the viewer. Subordinate team colors should be specified.

(e) Use traditional doctrinal colors for other graphics (green for obstacles, yellow for contaminated areas, and so on), but develop an SOP that uses the color capabilities of the systems to identify both templated actions or activities (such as proposed obstacles and templated enemy actions or positions) and executed or actual activities (emplaced obstacles and observed enemy).

(2) ***Overlays.*** When creating overlays, use multiple smaller overlays instead of one large overlay to speed transmission times. System operators can open the overlays they need, displaying them simultaneously. This technique also helps operators in reducing screen clutter.

(a) The S3 should create the initial graphic control measures (boundaries, objectives, and phase lines) on a single overlay and distribute it to the staff. This overlay should be labeled as the operations overlay with the appropriate order number.

(b) Staff elements should construct their appropriate graphic overlays using the operations overlay as a background but without duplicating the operations overlay. This avoids unnecessary duplication and increase in file size and maintains standardization and accuracy. Each staff section labels its overlay appropriately with the type of overlay and order number (for example, fire support, OPORD X-XX).

(c) Before overlays are transmitted to subordinate, higher, and adjacent units, the senior battle captain or the XO checks them for accuracy and labeling. Hard copy (traditional acetate) overlays are required for the CPs and any analog units.

(d) Personnel transmit graphics for on-order missions or branch options to the plan before the operation, as time permits. If time is short, they transmit graphics with warning orders.

(3) ***Acetate and Maps.*** The advent of digitization does not mean that acetate and maps have no use and will disappear, at least not in the near future. Maps still remain the best tool when maneuvering and fighting on the battlefield or for controlling and tracking operations over a large area. The combination of a map with digital situational information and terrain database is ideal; both are required and extensively used.

11-24. STANDING OPERATING PROCEDURE CONSIDERATIONS

This paragraph contains information regarding digital operations that is relevant for the brigade and task force tactical SOPs. Most of the digital operating procedures must be established at brigade level to achieve standardization and effective C2. As units have different mission requirements and technical changes occur, they should experiment with these guidelines.

a. **Filter Settings.** For there to be a common picture, all FBCB2 and EBC platforms must have the same situational information filter settings. This is particularly important for the enemy situational information picture so that as icons go stale, they purge at the same time on all platforms. Standard filter settings based upon the nature of the enemy's operation should be established in unit SOPs and be the same throughout the brigade. For enemy offensive operations, the filter setting times should be short; for enemy defensive

operations, the setting times should be longer, reflecting the more static nature of the enemy picture.

(1) Standard filter setting may need to be adjusted based on the terrain and the mission. In compartmented, difficult terrain, longer settings are more appropriate, perhaps 10 minutes for the attack. In wide-open, fast-paced operations in the desert, however, shorter settings in the 5-minute range may be more appropriate. Also, as the enemy transitions from offensive to defensive operations, the decision should be made at brigade level to change to the appropriate standard filter setting.

(2) The standardization of friendly filter settings is of equal importance in maintaining a common situational information picture throughout the force. FBCB2 provides three methods for updating individual vehicle locations: time, distance, and manually. When the system is fully operational, it automatically updates friendly icons using time, distance traveled, or both, based on the platform's friendly situational information filter settings. These settings should be standardized across the force based on both the mission and the function of the platform or vehicle, with shorter refresh rates for combat vehicles and vehicles that frequently move versus longer refresh rates for fairly static vehicles such as TOCs. Tailoring the frequency of these automatic updates also reduces the load on the tactical internet, freeing more capacity for other types of traffic.

(3) The friendly icon refresh rate may also change as the battle is executed. This is especially true in the transition from the offense to the defense or vice versa. The standardization of friendly situational filter settings is probably most effectively done at the brigade level using the brigade tactical SOP. There are no set rules for what these settings should be; they must be established based on the unit's experience in using FBCB2 and the capacity of the tactical internet. The capability to update a vehicle's position manually should be used only when a platform's system is not fully functional and has lost the ability to maintain its position within the system.

b. **Reporting.** It may not be advantageous to have all platforms on the battlefield send spot reports digitally. This can lead to multiple reports of the same enemy element and contribute to an already confused and indecipherable intelligence picture. Defining who within the brigade can initiate digital spot reports can help eliminate this problem. One technique is to limit the creation of enemy icons via digital spot reports to reconnaissance elements (brigade reconnaissance troop and task force scouts) and the company team leadership (commander, XO, or 1SG). Others report on FM to their higher headquarters, which creates and manages the icon. This also helps those who execute the direct fire fight by moving the digital reporting responsibility to someone who is somewhat removed from the fight. At company level, the XO, 1SG, or CP personnel become the primary digital reporters. These assignments cannot be completely restrictive. Unit SOPs and command guidance must allow for and encourage soldiers who observe the enemy and know they are the sole observer (because there is no corresponding enemy icon displayed in the situational information picture) to create a digital spot report. Brigade and task force SOPs should define the schedule for report submissions, the message group for the reports, and the medium (digital system or verbal) to be used.

c. **Updates.** Establish a routine schedule of system updates. For example, the S2 section should continuously update the ASAS database and should transmit the latest ASAS situational information picture to the network every 30 minutes during operations

if the task force commander, S3, or scouts need it. Also, staff sections should print critical displays on an established schedule. These printed snapshots of situational information can be used for continuity of battle tracking in the event of system failures and can contribute to AARs and unit historical records.

d. **Orders and Overlays.** SOPs should define the technical process for creating, collating, and transmitting orders and overlays, both analog and digital.

e. **Filing System Naming Convention.** For interoperability and clarity, brigade SOPs should define the naming convention and filing system for all reports, orders, and message traffic. This significantly reduces time and frustration associated with lost files or changes in system operators.

f. **Color Standards.** As discussed previously, SOPs should define colors used in graphics down to team level.

g. **Databases.** C2 systems will inevitably migrate to a web-based capability, allowing information to be databased and then accessed by users as needed or when they are able to retrieve it. Commanders should establish standard guidelines for setting FBCB2 default addresses in their units. For example, the S2 may transmit an intelligence summary to all subordinates and inevitably some will lose the file or not receive it. The S2 can simultaneously post that same summary to his "homepage" so users can access it as required. If this technique is used, there are a couple of key things to note:

- Posting a document to a homepage does not constitute communications. The right people must be alerted that the document is there and available.
- Keep documents concise and simple. Elaborate PowerPoint slide briefings will take days to transmit, collapsing the tactical Internet. Gaudy graphics and templates are a no-go.
- The amount of information databased and who has access must be carefully controlled, both to maintain security and to keep from overloading the tactical internet.

11-25. INTEGRATING DIGITAL AND ANALOG UNITS

It will be several years before the majority of the Army is digitally equipped. Even then, the brigade will operate with elements without digital equipment, especially in joint or coalition environments. National Guard and Army Reserve units, light forces, supporting corps artillery, and corps-level logistical units are the most likely types of analog units with which brigades and task forces will operate. Procedures for integrating digital and analog units are essential for the brigade.

a. FM and MSE are the primary communications mediums with the analog unit.

b. Hard copy orders and graphics are required.

c. Graphical control measures require the level of detail necessary to support operations of a unit without situational information. In general, this requires more control measures tied to identifiable terrain.

d. Digitally equipped LNO teams are critical.

e. The task force staff must recognize that integrating an analog unit into a digital unit requires retention of most of the analog control techniques. In essence, two control systems must be in operation, with particular attention paid to keeping the analog unit apprised of all pertinent information that flows digitally.